**WATER RESOURCES RESEARCH GRANT PROPOSAL**

**Project ID:** 2005IN177B

**Title:** Characterizing hydrologic response in urbanizing watersheds in Indiana: Determination of changes in runoff coefficients

**Project Type:** Research

**Focus Categories:** Climatological Processes, Ecology, Floods

**Keywords:** runoff, storage, urban hydrology, rural/urban sprawl, BMP

**Start Date:** 03/01/2005

**End Date:** 02/28/2006

**Federal Funds:** $29,501

**Non-Federal Matching Funds:** $60,387

**Congressional District:** 9th

**Principal Investigator:**
Susan Grimmond

**Abstract**

The increasing pace of residential development affects the landscape in a number of ways. As watersheds become developed, more land is covered by impervious surfaces and a larger fraction of the precipitation is quickly routed to streams. One problem caused by the roads, yards, and homes that replace rural land is an increase in stormwater runoff and more frequent and more severe flooding. Understanding the impact of development on runoff requires data to help define the effects of changes in land use and land cover as well as knowledge of the hydrology that determine how flows in a particular stream could be altered by different patterns of drainage, home sites, water supply usage and ground cover. For this reason, it is proposed that three subwatersheds in Monroe County will be gauged to determine the degree to which different patterns of development and best management practices alter the hydrograph of intermittent headwater streams. This proposal has the support of the Monroe County Drainage Board (see letter of support). The support of the Board is a reflection of their interest in a credible stormwater management plan. It is anticipated that best management practices (BMPs) that can be demonstrated to be effective will be more acceptable to developers.